WHAT IS CLAIMED IS:

1. A driver circuit for a stepper motor in conjunction with a processor outputting a PWM signal, the driver circuit comprising:

an H-bridge circuit having first and second inputs, said first H-bridge input connecting to the output PWM signal from the processor; and

a switching circuit having an input and an output, said switching input connecting to the output PWM signal from the processor, and said switching output connecting to said second H-bridge input,

wherein said switching circuit performs an inversion of a duty cycle of the PWM signal when the PWM signal is present, and a non-inversion of said duty cycle when the PWM signal is not present.

2. The driver circuit as defined in claim 1, wherein the driver circuit is configured to be open-loop.

3. The driver circuit as defined in claim 1, wherein said switching circuit includes an exclusive OR gate.

4. The driver circuit as defined in claim 1, wherein said switching circuit includes a charge pump.

5. The driver circuit as defined in claim 4, wherein said charge pump shuts down when the PWM signal is not present.

6. A stepper motor system, comprising:

a stepper motor;

a motor driver circuit to drive said stepper motor, said motor driver circuit having first and second driver inputs;

a switching circuit having a switching input and a switching output, said switching input connecting to said first driver input and said switching output connecting to said second driver input;

a processor outputting a PWM signal to said first driver input and said switching input; and

said switching circuit functioning as an inverting circuit when said PWM signal is present, and as a buffer circuit for said motor driver circuit when said PWM signal is not present.

7. The stepper motor system as defined in claim 6, wherein the system functions as an open-loop system.

8. The stepper motor system as defined in claim 7, wherein said processor dynamically corrects said PWM signal at low speeds of a shaft of said stepper motor.

9. The stepper motor system as defined in claim 8, wherein a rotational position of said motor shaft is calibrated at an initialization or startup of the system.

10. The stepper motor system as defined in claim 6, wherein said motor driver circuit comprises and H-Bridge.

11. The stepper motor system as defined in claim 6, wherein said switching circuit comprises an exclusive OR gate.

12. The stepper motor system as defined in claim 6, further comprising:

a program memory accessible by said processor; and

a sine table accessible by said processor.

13. The stepper motor system as defined in claim 12, wherein said sine table stores an approximated pure sine wave.

14. The stepper motor system as defined in claim 6, wherein said buffer circuit substantially prevents current flow through said motor driver circuit and windings of said stepper motor when said PWM signal is not present.

15. The stepper motor system as defined in claim 6,

wherein said PWM signal includes a duty cycle,

wherein 50 percent of said duty cycle represents a zero voltage across windings of said stepper motor,

wherein zero percent of said duty cycle represents a maximum current through said windings in a first direction, and

wherein 100 percent of said duty cycle represents a maximum current through said windings in a second direction opposite to said first direction.

16. The stepper motor system as defined in claim 15, wherein first and second current directions are switched at a rate of approximately 19.5 kHz.

17. The stepper motor system as defined in claim 6, wherein said motor driver circuit is a direct voltage drive circuit.

18. The stepper motor system as defined in claim 6, further comprising a PWM master clock derived from a stable crystal oscillator.

19. The stepper motor system as defined in claim 6, wherein one step of said stepper motor is equal to one cycle of a sine wave, and includes 1024 microsteps per step.

20. A method for driving a stepper motor having a motor driving circuit for driving the stepper motor, comprising the steps of:

predicting a rotational acceleration of a rotatable shaft of the motor;

computing a shaft rotational position based on said predicted shaft acceleration;

predicting a present deviation value of said computed shaft position based on said computed shaft position;

computing a rotational speed of said motor shaft based on said predicted shaft acceleration;

adjusting said predicted present deviation value based on said computed shaft speed;

correcting said adjusted deviation value for a zero-crossing anomaly; and

outputting said corrected deviation value to the motor driving circuit.

21. The driving method as defined in claim 20, wherein said corrected deviation value is output as a PWM signal in said outputting step.

22. The driving method as defined in claim 20, wherein an amount of correction in said correcting step decreases as said computed shaft speed increases.

23. The driving method as defined in claim 22, wherein said corrected deviation value is equal to said adjusted deviation value at high rotational shaft speeds.

24. The driving method as defined in claim 20, wherein in said acceleration predicting step, said acceleration is determined on the basis of at least one of a desired shaft angle versus a predictive deviated shaft angle for a position controller, and a desired shaft speed versus a predictive deviated shaft speed for a speed controller.

25. The driving method as defined in claim 24, wherein said predictive deviated shaft angle and speed are determined empirically.

26. The driving method as defined in claim 20, wherein in said shaft position computing step, said shaft position is computed to be equal to a sum of a previous shaft position, a product of a predicted shaft speed and time, and one half of a product of said predicted shaft acceleration and time squared.

27. The driving method as defined in claim 26, wherein said computed shaft position is divided by 4096 to derive a sine table lookup index.

28. The driving method as defined in claim 20, wherein in said adjusting step, said computed shaft speed is first compensated for at least one of a current flow through windings of the stepper motor at zero shaft speed, and inductive components of said windings.

29. The driving method as defined in claim 28, wherein a torque of the stepper motor is kept generally constant over a continuous range of rotational shaft speeds.